BRUHAT BANGALORE MAHANAGARA PALIKE

YELAHANKA ZONE

BYATARAYANAPURA DIVISION

KODIGEHALLI SUB DIVISION

WARD 7: BYATARAYANAPURA

Name of work:-Improvements to drains in chikka siddappa Layout AND ESTABLISHMENT OF RO PLANT AND PROVIDING AND FIXING OPEN Gym and childrens play eyuipments in Amruthalli in ward no.07, Byatarayanapura Kodigehalli Sub Division.

Estimated Cost: 70.00 lakhs

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SL	Description of work	No.	Dimensions			Qty	Rate	Amount
			L	B	D			
1	2	3	4	5	6	7	8	10
1	KSRRB 300-1. Earthwork excavation by manual means in rodinary soil involving an average horizontal throw upto 2 m and an average lift upto 1.5m, excavated surafce levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking clods complete as per specifications.. Pg No.141.Item No.19.1)							
	Desilting of drains							
	Laxminarayana temple road	2	300	0.6	0.6	216		
	Main road	2	132	0.45	0.45	53.46		
	cross road	2	25	0.45	0.45	10.125		
	Main road	2	128	0.45	0.45	51.84		
	Basic rate	cum	**82.00**			**331.43**	**86.92**	28808
	Add A.W. 6%		4.92					
	Total		**86.92**					
2	KSRRB 2-1.1: Earthwork in surface excvation in ordinary soil for levelling and lowerng the ground manually (other than foundation of buildings, culverts road drains and trenches of pipe lines and cables) and removing the excavated stuff to a distance not exeeding 50m and lift upto 1.5m, excavated stuff to a distance not exceeding 50m and lift upto 1.5m excavated syrface levelled and neatly dressed, disposed earth to be levelled after breaking of clods and neatly dressed as per specifications.(Pg No.5.Item No.2.1)							
	For open gym and children play equipments	4	0.45	0.45	0.3	0.24		
	CC Road	1	60	3.5	0.3	63		
	Road work- only for road cut portion							
	Main road	1	32	3	0.2	19.2		
	cross road	1	10	4	0.2	8		
	Main road	1	60	2.5	0.2	30		
	Basic rate	cum	**157.00**			**120.44**	**166.42**	20045
	Add A.W. 6%		9.42					
	Total		**166.42**					

3	Providing and constructing load bearing wall with solid concrete solid blocks having block density not less than 18000 Kg/m3 having a minimum average compressive strength of 5.00 N/mm2 confimring to IS 2185 (pART 1):2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materialsincluding cost of all materilas, labour charges, scaffolding, curing complete as per specifications. with solid concrete blocks 400x200x200mm (PWDSR 2015-16, I. 5.27.1, P. 25.1)							
	CC Road - One side	2	50		0.2	20		
	Basic rate	Sqm	**937.00**			**20.00**	**993.22**	19865
	Add A.W. 6%		56.22					
	Total		**993.22**					
4	Providing granite slabs of selected quality roughly dressed and fixed in cementer mortar (1:6) including fixing curing etc., complete. Pg No.25, Item No.5.31.1 (7.5 cms thick)							
	CC Road - One side BS Slab drain	1	50	1.35		67.5		
	Covering slab	1	50	0.6		30		
	Basic rate	cum	**628.00**			**97.50**	**665.68**	64904
	Add A.W. 6%		37.68					
	Total		**665.68**					
5	KSRB 4-1.3: Providing and laying in position plain cement concrete of nominal mix 1:4:8 using 40mm and down size graded granite metal machine mixed, conrete laid in layers not exceeding 15 cms. Thick well compacted in foundation and plinth, including cost of all materials labour, HOM of machinery, curing complete as per specification . (Pg.No.12, It.4.3)							
	For open gym and children play equipments	4	0.45	0.45	0.15	0.12		
	CC Road	1	60	3.5	0.15	31.50		
	Basic rate	cum	**4867.00**			**31.62**	**5159.02**	163136
	Add A.W. 6%		292.02					
	Total		**5159.02**					
	Basic rate		68.00					

6	Cement concrete pavement. Construction of un-reinfirced plain cement concrete pavement, thickness as per deisgn, over a prepraed sub base with OPC cement or any other type as per clause 1051..2.2 with 25mm and down size graded granite metal coarse aggregates and fine aggregates ,with superplastiser @ 3lts confirming to IS9103-1999 REAFFIRMED-2008, Mixed in a concrete mixer of not less than 0.6 cum capacity and approximate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates inlcuding levelling the form work as per drawing) and spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continous operation including, provision of contraction, expansion, construction operation including longitudinal joints, including groove cutting charges joint filler, sparation menebrane, sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specfication.M20 (AT 300 Kg per cum coarse aggregats @ 0.69cum and fine aggregate @0.43cum) (Pg No.177, It No.22.6.2)							
	CC Road	1	60	3.5	0.1	21.00		
	Basic rate	cum	**5197.00**			**21.00**	**5508.82**	115686
	Add A.W. 6%		311.82					
	Total		**5508.82**					
	Basic rate		68.00					
7	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240 kgs with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.53cum, machine mixed concrete laid in layers not exceeding 15cms thick well compacted in foundation plinth and cills including cost of all materials, labour HOM of machinery curing complete as per specifications.(Item No.4.6, Page No.12)							
	For open gym and children play equipments	4	0.45	0.45	0.15	0.12		
	Basic rate	cum	**5441.00**			**0.12**	**5767.46**	701
	Add A.W. 6%		326.46					
	Total		**5767.46**					
8	Providing and fixing open gym euipments and children play equipments in Amruthalli.,							
		1	TMP 013 WONDER PLAY			1	1866124	1866124

		1	TMP005-Thrill Fun			1	1388132	1388132
		1	Chest Press			1	182114	182114
			GST CHARGES 18%					618546.6
9	KSSRB M 400-17: Providing laying, spreading and compacting graded fine aggregate to wet mix macadam specificationns including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surfce and compating with vibratory roller to achieve the desired density complete as per specifications. MORTH specifications no. 406(P-157., It No: 20.18)							
	Road work- only for road cut portion							
	Main road	1	42	3	0.15	18.90		
	cross road	1	11	4	0.15	6.60		
	Main road	1	60	2.5	0.15	22.50		
						48.00	**1768.08**	84868
	Basic rate	cum	**1668.00**					
	Add A.W. 6%		100.08					
	Total		**1768.08**					
10	KSRRB-500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and or/ compressed air to receive bituminous treatment including cost of all materails, labour, HOM Machineries complete as per specifications.(Page No.161, Item No.21.2)							
	Main road	1	132	4.8		633.60		
	cross road	1	25	4.8		120.00		
	Main road	1	125	4.8		600.00		
						1353.60	**3.18**	4305
	Basic rate	cum	**3.00**					
	Add A.W. 6%		0.18					
	Total		**3.18**					

11	KSRRB 500-07: Providing and applying tack coat with80/100 grade bitumen(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials , labour HOM Machineries complete as per specifications.. (Pg No. 160. Item No. 21.7)							
	Main road	1	132	4.8		633.60		
	cross road	1	25	4.8		120.00		
	Main road	1	125	4.8		600.00		
						1353.60	**11.66**	15783
	Basic rate	cum	**11.00**					
	Add A.W. 6%		0.66					
	Total		**11.66**					
12	KSRRB 500-18: Providing and laying semi dense bituminous concrete using crushed aggragates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work to site,laying with a hydrostatic paver with paver finisher to the required grade, level and alignment rolling with smooth wheeled, vibratory and tandem rolleres to achieve the desired compaction as per MORTH Specification clause No. 500.8 complete in all respects as per specifications.-25-30mm compacted thickness with 5% bitumen 80/100 grade (grading II).(P178, It No: 21.20.6)							
	Main road	1	132	4.8	0.03	19.01		
	cross road	1	25	4.8	0.03	3.60		
	Main road	1	125	4.8	0.03	18.00		
						40.61	**6433.14**	261237
	Basic rate	cum	**6069.00**					
	Add A.W. 6%		364.14					
	Total		**6433.14**					
13	KSRRB M800-13: Road marking with hot applied thermoplastic compund with reflectrising glass beads on bituminous surface. Providing and laying of hot applied thermoplastic compund 2.5mm thick including reflectorising glass beads at 250gms per sqm area, thickness of 2.5mm is exclusive of surface apllied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specfications. MORTH specifications No.803.(Pg No.185.Item No.24.15)							
	Main road	2	132	0.1		26.40		
	cross road	2	25	0.1		5.00		
	Main road	2	125	0.1		25.00		
						56.40	**542.72**	30610
	Basic rate	Sqm	**512.00**					
	Add A.W. 6%		30.72					
	Total		**542.72**					
14	KSRRB M100-1 Loading and unloading of stone boulder/stone aggregates/ sand/ kanker/ moorum. KSRRB M100-1:Placing tipper at loading point loading with front end loading, dumping turning for return trip, excluding time for haulage and return trip complete as							

	Basic Rate	cum	**68.00**			331.43	**106.00**	35132
	Rs. 2.50 Tonne Km.							
	Average Weight of earth 1.28 Tonne/Km.							
	For 10 Km							
	Rs.2.50X1.28TonneX10Km		**32.00**					
	Total		**100.00**					
	Add Area Weightage6%		**6.00**					
			106.00					
	RO PLANT							
15	KSRB 2-1.1: Earth work in surface excavation in ordinary soil for leveling and lowering the ground manually (other than foundation of buildings, culverts, road drains and trenches of pipe line and cables) and removing the excavated stuff to a distance not exceeding 50m and lift upto 1.5m, excavated surface leveled and neatly dressed, disposed earth to be leveled after breaking of clods and neatly dressed as per specifications, Specification No KBS 2.1(a) / 2.3.1, No. 5 / Item No. 2.1							
	For Leveling Ground	1	4	3.5	0.15	2.10		
	Centre Line 2 Nos	1	3.65	0.9	0.9	2.96		
		1	3.05	0.9	0.9	2.47		
	Basic rate	cum	**157.00**			**7.53**	**169.56**	1277
	Add A.W. 8%		12.56					
	Total		**169.56**					
16	KSRB 4-1.3 : Providing and laying in position plain cement concrete of mix 1:4:8 with OPC cement @ 180 kgs with 40mm and down size graded granite metal coarse aggregates @ 0.85cum and fine aggregares @ 0.57 cum machine mixed, concrete laid in layers not, exceeding 15cms, thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1,4.2. No. 12 / Item No. 4.3 /							
	Wall Portion	2	3.65	0.90	0.15	0.99		
		2	3.05	0.90	0.15	0.82		
	Flooring	1	3.20	2.60	0.15	1.25		
	Building Suroundings	2	3.65	0.60	0.15	0.66		
		2	3.05	0.60	0.15	0.55		
	Basic rate	cum	**4867.00**			**4.26**	**5256.36**	22408
	Add A.W. 8%		389.36					
	Total		**5256.36**					
17	KSRB 5.2.3 : Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5.1.13 Page No. 23 / Item No. 5.6 /							
	Wall Portion	2	3.65	0.75	0.60	3.29		
		2	3.05	0.75	0.60	2.75		
	Basic rate	cum	**4187.00**			**6.03**	**4521.96**	27268

	Add A.W. 8%		334.96					
	Total		**4521.96**					
18	KSRB 5.3-3 : Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications.KBS 5-1.13 Page No. 23 / Item No. 5.9 /							
	Wall Portion	2	3.45	0.45	0.45	1.40		
		2	2.90	0.45	0.45	1.17		
	Basic rate	cum	**5005.00**			**2.57**	**5405.40**	13902
	Add A.W. 8%		400.40					
	Total		**5405.40**					
19	KSRB 2.3 : Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour complete as per specifications. Specification No. KBS 2.9 Page No. 6 / Item No. 2.10							
						7.53		
	Basic rate	cum	**127.00**			**7.53**	**137.16**	1033
	Add A.W. 8%		10.16					
	Total		**137.16**					
20	KSRB 4-1.6 : Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240 kgs with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15cms, thick, well compacted, in foundation, plinth and cills, including cost of all materials, labour, HOM of machinery, curing complete as per specifications, specification. No. KBS 4.1,4.2. No. 12/ Item No. 4.6							
	Building Suroundings	2	3.45	0.45	0.10	0.31		
		2	2.90	0.45	0.10	0.26		
		2	3.65	0.60	0.10	0.44		
		2	3.05	0.60	0.10	0.37		
	Basic rate	cum	**5441.00**			**1.38**	**5876.28**	8083
	Add A.W. 8%		435.28					
	Total		**5876.28**					
21	Providing flooring with 60 cms.x 60 cms. size Vitrified glazed tiles of approved quality & make, fixed on top of existing flooring fixed with suitable adhesive, including cutting the tiles to the required size and fixing etc., complete Page No. 107, Item No. 14.44,							
		2	3.20	2.60		16.64		
	Basic rate	cum	**1069.00**			**16.64**	**1154.52**	19212
	Add A.W. 8%		85.52					
	Total		**1154.52**					

22	Providing and fixing Pre cast solid concrete kerb stones made out of CC 1:2:4 of size 450x200x400 mm and finished with CM 1:3 plastering and finishing cutting etc., complete. Page No. 25 / Item No. 5.29.1)							
		1	130.00			130.00		
	Basic rate	nos	**364.00**			**130.00**	**385.84**	50160
	Add A.W. 6%		21.84					
	Total		**385.84**					
23	Providing and applying ready mix priming coat over ocncrete / masonry, / asbestos cement sheet / plastered surfaces includding preparing the surface after thorougly cleaning of oil, grease, dirt and other foreign matter and sand papering including cost of materials, labour compelte as per specifications. Page No. 122 / Item No.							
		1	130.00		0.45	58.50		
	Basic rate	nos	**26.00**			**58.50**	**27.56**	1613
	Add A.W. 6%		1.56					
	Total		**27.56**					
24	Providing and applying spray painting in two coats (excluding priming coat) over ocncrete / masonry, / asbestos cement sheet / plastered surfaces includding preparing the surface after thorougly cleaning of oil, grease, dirt and other foreign matter and sand papering including cost of materials, labour compelte as per specifications. Page No. 121 / Item No. 15.81)							
		1	130.00		0.45	58.50		
	Basic rate	nos	**66.00**			**58.50**	**69.96**	4093
	Add A.W. 6%		3.96					
	Total		**69.96**					
25	KSRB 14.6-1: Providing and laying heavy duty cobble stones 60mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per sqm over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and HOM of machineries complete as per specifications. Specification No. KBS (P.101/I.14.6)							
		1	5.00	1.50		7.50		
	Basic rate	Sqm	**912.00**			**7.50**	**966.72**	7251

	Add A.W. 6%		54.72					
	Total		966.72					
	Providing RO Plant							
	Providing revsrse osmosis suystem to cover 2000 Liters of High TDS water per hour							
	TECHNICAL							
	Flow Rate:							
	Feed Water : 5000 LPH							
	Treated Water : 3000 LPH							
	Reject Water : 2000 LPH							
	RAW WATER PUMP							
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for filter?							
	SAND MEDIA FILTER							
	Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the members							
	ACTIVATE CARBON FILTER							
	Purpose:- To remove the total color, smell, odor from the water.							
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & Accessories : Pipe of PVC 10 Bar tested pressure testing cock & pressure gauges at intlet - outlet of system							
	DOSING SYSTEM							
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes							
	MICRON FILTER							
	Purpose : To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.							
	HIGH PRESSURE PUMP							
	Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery							
	RO membrane housing.							
	Purpose : To pack membrane and operate at high pressure.							

	RO MEMBRANES							
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.							
	RO CLEANSING SYSTEM							
	ELECTRICAL PANEL							
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.							
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.							
	INSTRUMENTATION							
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO							
	PH DOSING SYSTEM							
	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.	1					1.00	946000
26	Providing and Construction of pup panel cabin MS material vetical 50 x 100 mm thick tube, rafter 50 x 100 mm thick rectangle tube 50 x 50 mm thick tuve purlines, roof panel of 30 mm sandwitch puf panel density : 40 kg and wall panel of 30 mm sandwitch puf pannel density : 40 kgs (polyurethane foam) with noth side G I Colour coated sheet ancillaries like C-channels, angles, sealene etc, door of size 1.8 x 2.0 m an alluminium powder coated window of size 1.00 x 2.00 m 1 No of structural glazing (fixed and sliding One side slope as per elclosed drawing cabin of size etc (Approved Quoated Rate) (10 x 12 Ft)	1				1.00		

	Approved Rate		250204.80			1.00	250204.80	250205
	Electrification chages							50000
				Sub Total				6305228.60
				Add 10% KRIDL Charges				630522.86
				Add 1% Labour cess charges				63052.29
				Miscellaneous and rounding off				1196.25
							Total:-	7000000.00

Certificate:-

1)This is certified that the work spot comes under BBMP limits only.

2)The rates are as per CSR of 2016-17 year of PWD Bangalore Circle.

3)The Provisions made in estimate are adequate and necessary.

Asst.Engineer
Ward no.7

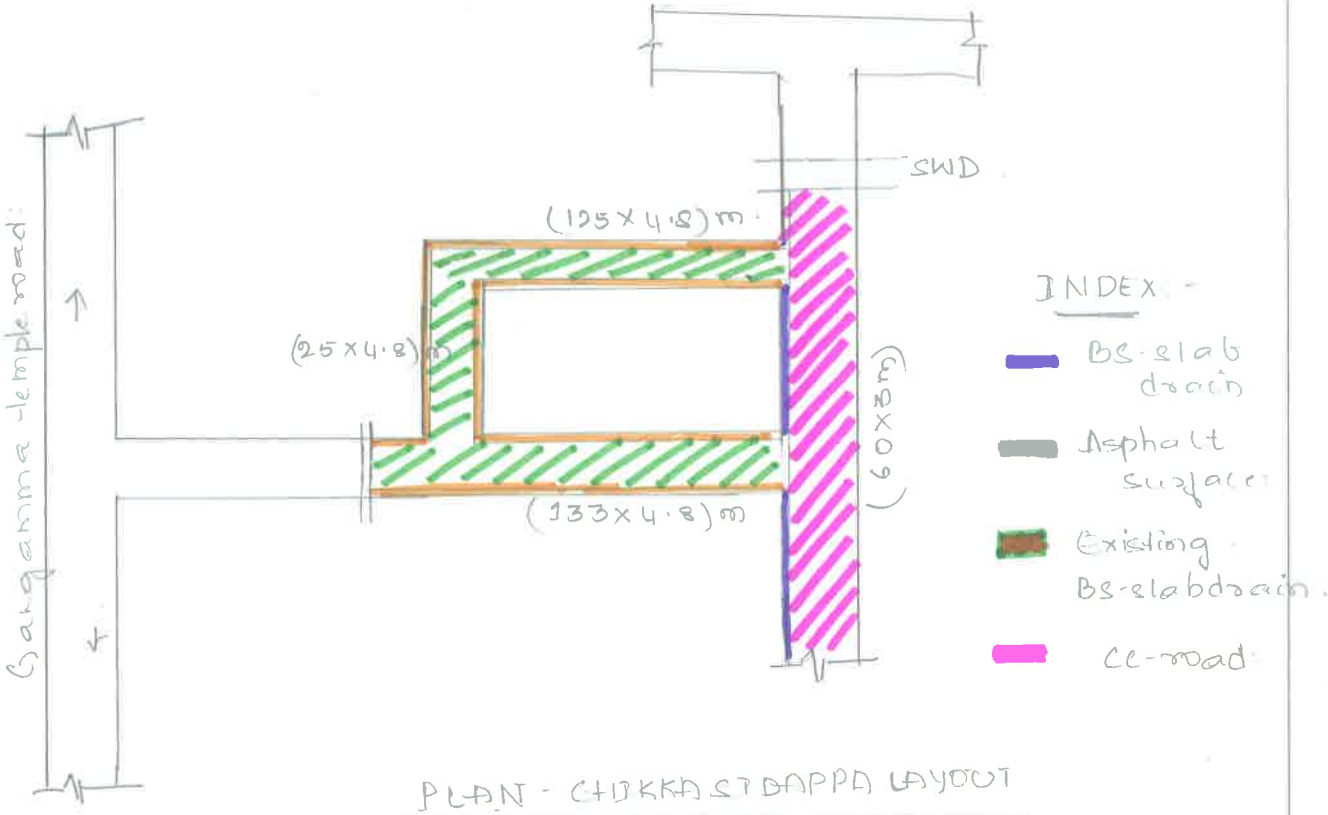
Asst.Exe.Engineer
Kodigehalli Sub-division
B.B.M.P.

Executive Engineer 29/12
Byatrayanapura Division
B.B.M.P.

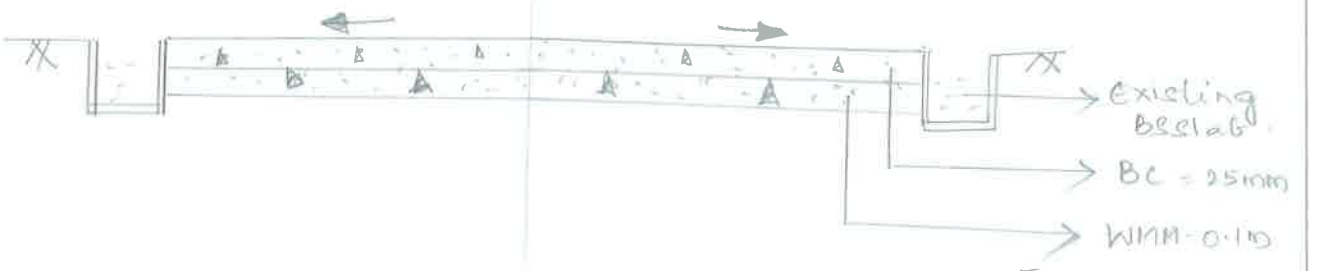
ADMINISTRATIVE APPROVAL
Accorded For Rs. Seventy Lakhs only
Head of A/C P-2178
Div. Ref. No. 153/17-18 Date 29/12/17
EE(BTP) 29/12
AE 29/12

Technical Sanction
Accorded For 70.00 lakh Rs
Head of A/C P2178
CER NO : 523 Dt: 12 01 18
TA CE (YNK)

Improvements to drains in chikka sidappa layout and establishment of RO plant and providing and fixing open gym and children play equipments in Amruthahalli in ward no.07.



PLAN - CHIKKA SIDAPPA LAYOUT



CROSS-SECTION

AE (W7)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.